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DEPARTMENT OF TRANSPORTATION  
Federal Railroad Administration  
[FRA Emergency Order No. 20, Notice No. 2]

**Commuter and Intercity Passenger Railroads**, Including Public Authorities Providing **Passenger** Service, and Affected Freight **Railroads**; Clarification of Emergency Order Requiring Enhanced Operating Rules and Plans for Ensuring the Safety of Passengers Occupying the Leading Car of a Train With Appropriate Amendments

#### Introduction

On February 20, 1996, the Federal Railroad Administration (FRA) issued Emergency Order No. 20 (Notice No. 1). The order required prompt action to immediately enhance **passenger** train operating rules and emergency egress and to develop a more comprehensive interim system safety plan addressing cab car forward and multiple unit (MU) operations that do not have either cab signal, automatic train stop, or automatic train control systems. Subsequent to issuance of the order, FRA and the Federal Transit Administration (FTA) recognized that the original order's safety measures, while establishing requirements to abate the safety risks at issue, would benefit from refinements increasing their effectiveness. Three aspects of the original order are being refined in this notice. FRA is: (1) More sharply focusing and strengthening the provisions relating to the delay in block rule; (2) tailoring the signal calling provisions to reflect more diverse operating situations; and (3) providing more detailed guidance on the emergency egress sampling provision. FRA is also clarifying measures that apply to defective cab signal, automatic train stop (ATS) and automatic train control (ATC).

Emergency Order No. 20 generally applies to **commuter** and **intercity passenger railroads** using push-pull and MU operations where cab signal, ATS, or ATC is not in operation and trains are operating in excess of 30 miles per hour. Although enroute failures are rare events, if cab signals, ATS or ATC fail, the relevant safety measures of this order apply. The only exception would be when cab signal, ATS or ATC fail on track that is not governed by wayside signals. In those instances, adherence to existing federal standards and applicable operating rules provide a comparable level of safety. It is important to note, however, that **railroads** are not expected to conduct efficiency testing when cab signal, ATS, or ATC is the normal method of operation and there is an occasional failure. Therefore, **railroads** are not expected to interfere with normal operation of the cab signal, ATS, or ATC systems for such efficiency testing. All changes and the clarification addressed above reflect discussions that FRA and FTA held with the **commuter** and **intercity railroads** subsequent to issuance of the order.

### (1) Delayed in Block

The original order required application of the delay-in-block provisions regardless of the train's location on the railroad although, in the relevant accidents that formed the basis for the order, the trains involved were operating in a block immediately preceding an interlocking or controlled point. Additionally, the original order provided no maximum speed for delayed-in-block movements other than that provided in relevant railroad rules. The FRA's refined approach will limit the order's applicability to blocks immediately preceding interlockings and controlled points and require that the train reduce speed in accordance with applicable operating rules, but in no case may speed exceed 40 miles per hour. FRA established the maximum speed of 40 miles per hour in accordance with the reduced speed imposed under its regulations addressing failure of cab signal, ATS, or ATC devices (see 49 CFR 236.567, 236.811). This will more clearly focus the rule on the situations intended to be addressed by the original order and ensure that the maximum reduced speed permitted where the rule applies is standardized and is based on a known standard. In other words, the maximum speed where the rule applies will be 40 miles per hour or less, depending upon the railroad's rules. FRA is also strengthening the delay-in-block rule by adding a measure requiring that appropriate signs be installed at each affected signal and at the departure end of stations. This will prevent confusion as to where the rule applies.

### (2) Signal Calling

The modification to the signal calling provision reflects the reality that designated crew members will be positioned in varying locations when receiving the verbal communication identifying the signal indication. Although the initial version of the order specified a particular location on the train (i.e. in a trailing unit or car), the underlying safety concern can be satisfied by having the crew member receive and acknowledge the communication regardless of the responder's physical location on the train.

### (3) Emergency Egress

The original order required but did not set parameters for testing a representative sample of emergency exits. The alteration to the emergency egress provisions requires that sampling of emergency window exits be conducted in conformity with either of two alternate methods commonly recognized for such efforts. This modification provides a degree of uniformity industry wide. These methods require sampling meeting a 95 percent confidence level that all emergency window exits operate properly (i.e., the methods do not accept a defect rate of 5 percent). Although the original order would have required testing all exits on a specific series or type of car if one such car had a defective window exit, the amended order permits the use of these commonly accepted sampling techniques to determine how many additional windows in test. In general, these principles require that the greater the percentage of windows initially found defective, the greater the percentage of windows that will have to be tested.

In addition, FRA has modified the emergency egress portion of the order to clarify that the exterior marking requirement applies to those windows that may be employed for access by emergency responders, which may be windows other than, or in addition to, those designed for emergency egress for passengers. In addition, FRA has modified the interim system safety plan portion of the order to require discussion

of the railroad's programs and plans for liaison with and training of emergency responders with respect to emergency access to passengers. The original order required discussion only of methods used to inform passengers of the location and method of emergency exits.

#### Finding and Order

FRA concludes that certain current conditions and practices on **commuter** and **intercity passenger railroads** pose an imminent and unacceptable threat to public and employee safety. Of greatest concern are push-pull and MU operations lacking the protection provided by cab signal, automatic train stop, or automatic train control systems. Based on the matters discussed in Notice No. 1 of this order, I found that the unsafe conditions discussed there create an emergency situation involving a hazard of death or injury to persons. While I continue to find an emergency situation to exist, I have concluded that certain modifications to the order are necessary. For the convenience of those subject to this order, I have set forth here all of its terms, as amended. Accordingly, pursuant to the authority of 49 U.S.C. Sec. 20104, delegated to me by the Secretary of Transportation (49 CFR Sec. 1.49), it is hereby ordered that each **commuter** and **intercity passenger** railroad, and any other entity (e.g., freight **railroads** over whose lines affected **passenger** operations are conducted) whose actions are necessary to effectuate the directives in this order, take the following actions:

##### (1) Delayed-in-Block Rule

Note: This rule applies to all push-pull and MU operations unless cab signal, automatic train stop, or automatic train control is in operation, speeds do not exceed 30 m.p.h., or within yard or terminal limits as specified for this purpose by the railroad.

- (A) On March 4, 1996, at 12:01 a.m., have in effect, publish in its code of operating rules, and comply with a rule that requires: If a **passenger** train operating in the block immediately preceding an interlocking or controlled point stops for any reason, or its speed is reduced below 10 m.p.h., the train shall proceed under the reduced speed set forth in applicable operating rules governing such circumstances and be prepared to stop before passing the next signal. In no event shall this reduced speed exceed 40 m.p.h., although lower speeds are permissible. The train must maintain the prescribed reduced speed until the next wayside signal is clearly visible and that signal displays a proceed indication. A copy of the rule will be provided to the FRA Office of Safety Assurance and Compliance in care of James T. Schultz, Staff Director, Operating Practices.
- (B) Within 30 days of issuance of the railroad's rule, a railroad operating supervisor shall personally contact each engineer and conductor in **passenger** service and inform them in a face-to-face meeting of the requirements of that rule. Such briefing shall be documented and such documentation shall be available for FRA review upon request, including date, time, location, crew members contacted, and supervisor making the contact.
- (C) Within 60 days of issuance of the railroad's rule, each engineer/conductor in such **passenger** service shall receive an unannounced operational ('`efficiency'') test on the rule which requires a full stop at the signal ahead; and, within 90 days of rule publication, an on-board operational monitoring ride shall be conducted by an operating supervisor of the railroad to ensure a complete understanding of rule provisions. Such tests and operational monitoring checks shall be documented and such documentation shall be

- available for FRA review upon request, including date, time, location, crew members involved, and supervisor making the test/monitoring ride.
- (D) The railroad's program of operational tests and inspections under 49 CFR Part 217 shall be revised as necessary to include this rule, and shall specifically include a minimum of two such tests per year for each **passenger** engineer.
- (E) Within 30 days of issuance of the railroad's rule, an appropriate qualifying appurtenance shall be affixed to each signal governing the approach to an interlocking or controlled point signal to serve as a visual reminder to the engineer. Appropriate signage shall be displayed at the departure end of **passenger** stations located in the block immediately preceding interlockings or controlled points.

## (2) Crew Communications Rule

Note: This rule applies to all push-pull and MU operations unless cab signal, automatic train stop, or automatic train control is in operation, speeds do not exceed 30 m.p.h., or within yard or terminal limits as specified for this purpose by the railroad.

- (A) On March 4, 1996, at 12:01 a.m., have in effect, publish in its operating rules, and comply with a rule that requires: A crew member located in the operating cab of a controlling locomotive, cab car, or MU car, shall have means to communicate orally and shall communicate the indication and location of each wayside signal affecting the movement of the train as soon as the signal becomes visible, for all signals which require either (1) that the train be prepared to stop at the next wayside signal, or (2) that the train be prepared to pass the next wayside signal at restricted speed. In multiple track territory, the crew member shall include the affected track number. A copy of the rule shall be provided to the FRA Office of Safety Assurance and Compliance in care of James T. Schultz, Staff Director, Operating Practices.
- (B) A designated crew member shall immediately acknowledge the transmission, and confirm the information to the crew member(s) on the controlling locomotive by repeating the message. If the designated crew member fails to acknowledge the communication, the engineer must ascertain at the next scheduled stop why the message is not being confirmed. If necessary due to radio equipment failure, alternative means shall be established by the operating crew (e.g., via intercom, cellular telephone, etc.) to accomplish the procedure.
- (C) If the engineer fails to control the train movement in accordance with either a wayside signal indication or other restrictions imposed upon the train, the designated crew member shall at once communicate with and caution the engineer regarding the restriction, and, if necessary, take appropriate action to ensure the safety of the train, including stopping the movement if appropriate.
- (D) Within 30 days of the issuance of the railroad's rule, a railroad operating supervisor shall personally contact each engineer and conductor in **passenger** service and inform them in a face-to-face meeting of the requirements of this rule. Such briefing shall be documented and such documentation shall be available for FRA review upon request, including date, time, location, crew members contacted, and supervisor making the contact.
- (E) Within 60 days of the issuance of the railroad's rule, each engineer/conductor in such **passenger** service shall receive an unannounced operational ``efficiency'' test on the rule; and, within 90 days of rule publication, an on-board operational monitoring ride

shall be conducted by an operating supervisor of the railroad to ensure a complete understanding of rule provisions. Such tests and operational monitoring checks shall be documented and such documentation shall be available for FRA review upon request, including date, time, location, crew members involved, and supervisor making the test/monitoring ride.

- (F) The railroad's program of operational tests and inspections under 49 CFR Part 217 shall be revised as necessary to include this rule, and shall specifically include a minimum of two such tests per year for each **passenger** engineer.

#### (3) Emergency Egress: Marking and Inspecting Exits

- (A) No later than April 20, 1996, ensure that each emergency exit location is marked inside the car for **passenger** and crew information. Markings for egress from inside the car shall be accompanied by clear and legible instructions for operation of the exit. Also, clear markings shall also be provided on the exterior of each car indicating which windows may be employed for access by emergency responders. All such markings must be clearly visible and legible at egress locations. This paragraph does not require action where reasonably conspicuous and fully legible markings and instructions already exist.
- (B) Immediately begin, and by April 20 complete, a program to test a representative sample of emergency window exits on cars in its fleets to verify proper operation. Sampling must be conducted to meet a 95% confidence level and in accordance with Military Standard MIL-STD-105(D) Sampling for Attributes or American National Standards Institute ANSI-ASQC Z1.4-1993 Sampling Procedures for Inspections by Attributes. Defective units will be repaired before the car is returned to service. **Railroads** must report to FRA when such action is necessary, and shall include a timetable for window inspection and replacement on the car series to remedy the problem in the most expeditious manner.
- (C) Records of the date, car number, and verification of proper exit operation shall be maintained and available for FRA review upon request. Each railroad shall also verify emergency exit operation as part of routine vehicle maintenance cycles.

#### (4) Interim System Safety Plans

Each authority operating or contracting for the operation of push-pull, EMU or DMU service (including Amtrak) shall, not later than April 5, 1996, submit to FRA an interim system safety plan for the purpose of enhancing the safety of such operations. In developing such plans, the authority shall provide opportunity for the riding public and designated representatives of railroad employees to comment on proposed actions that may affect the quality of service, including **passenger** safety.

The plan shall address the following hazards associated with **passenger** occupancy of lead units:

- Train-to-train collisions.
- Derailments giving rise to the hazard of impact with fixed structures.
- Collisions with heavy vehicles at highway-rail crossings.

The plan shall take into consideration the overall safety of all passengers and crew members and shall, at a minimum, address the following opportunities for risk reduction:

(A) Use of cab car/MU car. The authority shall specify the circumstances under which occupancy of a cab or MU car in the lead position is permitted, by route and train assignment. The authority shall propose or report appropriate modifications in such practices, taking into consideration service needs (e.g., equipment capacity, **passenger** loadings) and safety issues (e.g., train densities, method of operation, availability of cab signals and automatic control, issues related to standing passengers, grade crossing exposure, and other relevant factors).

(B) Operating rules. The authority shall review railroad operating rules and practices pertinent to the hazards listed above to determine if further enhancements in safety are warranted and advise FRA as to what action is necessary to enhance the level of safety. Changes in existing rules shall be specified. In conducting this review, the operating authority shall analyze the measures imposed in sections 1 and 2 of this order and may propose alternative approaches that ensure the same enhancements in safety associated with those measures.

(C) Adverse conditions. In conducting the review of railroad operating rules and practices, consideration shall be given to adverse or unusual operating conditions such as weather (e.g., fog, heavy rain or snow, flooding, etc.).

(D) Short-term technology enhancements. The authority shall consider short-term enhancements in technology that may improve the safety of train operations, such as use of alerting devices, equipping of additional locomotives with cab signal/ATC apparatus (where in effect on the territory), or other available enhancements to enhance engineer performance or provide warning of operation in excess of authority provided by the wayside signal system. In addition, the authority shall consider whether the installation of additional signals on any particular line would appreciably reduce the risk of train collisions.

(E) Crew management. The authority shall review crew management practices in light of contemporary literature regarding shift work and cumulative fatigue to determine if the alertness and performance of employees can be promoted by changes in those practices. Special attention shall be given to the issue of night split shifts.

(F) Highway-rail grade crossings. The authority shall review risks to passengers associated with occupancy of cab or MU cars in the lead while passing over highway-rail crossings, particularly crossings utilized by heavy vehicles and vehicles transporting hazardous materials, and shall address measures that can reduce these risks.

(G) Emergency exit notification. The authority shall review methods it uses, in addition to marking emergency exits, to inform passengers of the location and operation of those exits, such as flyers dropped on seats, announcements to passengers, explanations on the face of **passenger** tickets, etc. The authority shall specify any plans it has to increase **passenger** awareness of the location and operation of emergency exits. The authority shall also discuss its plans for liaison with and training of emergency responders with respect to emergency access to **passenger** cars.

Upon receipt of plans responsive to the above-reference requirements, the Administrator, in consultation with the FTA Administrator, will determine whether other mandatory action appears necessary to address hazards associated with the subject rail **passenger** service.

## Relief

Petitions for special approval to take actions not in accordance with this order may be submitted to the Associate Administrator for Safety, who shall be authorized to dispose of those requests without the necessity of amending this order. A copy of this petition should be submitted to the Docket Clerk, Office of Chief Counsel, Federal Railroad Administration, 400 Seventh Street, S.W., Washington, D.C. 20590.

## Penalties

Any violation of this order shall subject the person committing the violation to a civil penalty of up to \$20,000. 49 U.S.C. Secs. 21301. FRA may, through the Attorney General, also seek injunctive relief to enforce this order. 49 U.S.C. Sec. 20112.

## Effective Date and Notice to Affected Persons

The amendments to this order shall take effect at 12:01 a.m. on March 4, 1996. The original order would have required the railroad to have its revised operating rules on delay in block and crew communications to be in place by March 2. The additional two days granted here is intended to ensure that it is feasible to revise, issue, and implement the revised rules by Monday, March 4. Other deadlines (i.e., for compliance with the emergency egress and interim system safety plan requirements) are not changed, but actual dates have been inserted to avoid confusion about how to count the days allotted for certain tasks. This notice will be published in the Federal Register as soon as possible. Prior to publication, copies of this notice will be delivered by overnight mail or facsimile to the affected **passenger railroads**, public authorities, and railroad labor organizations.

## Review

Opportunity for formal review of this Emergency Order will be provided in accordance with 49 U.S.C. Sec. 20104(b) and section 554 of Title 5 of the United States Code. Administrative procedures governing such review are found at 49 CFR Part 211. See 49 CFR Secs. 211.47, 211.71, 211.73, 211.75, and 211.77.

Issued in Washington, D.C. on February 29, 1996.  
Jolene M. Molitoris,  
Administrator.  
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